

CLAIMS

1. A power generating and propelling system of a vessel, comprising:

an internal combustion engine;

a power transmission device;

an electric power generating equipment provided between the internal combustion engine and the power transmission device; and

an electric motor disposed at an area of the power transmission device.
2. The power generating and propelling system of a vessel as set forth in claim 1, further comprising:

a rotary shaft of the electric motor disposed coaxially to any of rotary shafts of the power transmission device.
3. The power generating and propelling system of a vessel as set forth in claim 1, further comprising:

a rotary shaft of the electric motor disposed eccentrically and parallel to any of rotary shafts of the power transmission device.
4. The power generating and propelling system of a vessel as set forth in claim 2, wherein the rotary shaft of the electric motor transfers power to the power transmission

device through a torque limiter.

5. The power generating and propelling system of a vessel as set forth in claim 2, wherein the rotary shaft of the electric motor transfers power to the power transmission device through an elastic joint.

6. The power generating and propelling system of a vessel as set forth in claim 2, wherein the rotary shaft of the electric motor transfers power to the power transmission device through a clutch.

7. The power generating and propelling system of a vessel as set forth in claim 1, wherein cooling water for cooling the internal combustion engine is passed near the electric motor.

8. The power generating and propelling system of a vessel as set forth in claim 7, wherein the cooling water is taken in from the outside of a propelling machine of the vessel.

9. The power generating and propelling system of a vessel as set forth in claim 7, wherein the cooling water is circulated in a closed circuit provided within a propelling

machine of the vessel.

10. A power generating and propelling system of a vessel comprising:
 - an internal combustion engine having a substantially horizontal crankshaft;
 - a power transmission device having an input shaft, which is substantially coaxially connected to the crankshaft, and a substantially vertical transmission shaft;
 - a propeller shaft having a height different from the input shaft, the power transmission device transmitting rotational force of the input shaft to the propeller shaft;
 - an electric power generating equipment interposed between the internal combustion engine and the power transmission device; and
 - an auxiliary electric motor for driving the propeller shaft, the electric motor being driven by electric power generated from the generating equipment, wherein the electric motor has an output shaft substantially coaxially connected to the substantially vertical transmission shaft of the power transmission device.
11. The power generating and propelling system of a vessel as set forth in claim 10, wherein the propelling shaft is lower than the input shaft, and wherein the electric motor is disposed upright on a top of the power transmission device.
12. The power generating and propelling system of a vessel as set forth in claim 10,

wherein the output shaft of the electric motor transfers power to the power transmission device through a torque limiter.

13. The power generating and propelling system of a vessel as set forth in claim 10, wherein the rotary shaft of the electric motor transfers power to the power transmission device through an elastic joint.

14. The power generating and propelling system of a vessel as set forth in claim 10, wherein the rotary shaft of the electric motor transfers power to the power transmission device through a clutch.

15. The power generating and propelling system of a vessel as set forth in claim 10, wherein cooling water for cooling the internal combustion engine is passed near the electric motor.

16. The power generating and propelling system of a vessel as set forth in claim 15, wherein the cooling water is taken in from the outside of a propelling machine of the vessel.

17. The power generating and propelling system of a vessel as set forth in claim 15, wherein the cooling water is circulated in a closed circuit provided within a propelling

machine of the vessel.

18. A power generating and propelling system of a vessel comprising:
- an internal combustion engine having a substantially horizontal crankshaft;
 - a power transmission device having an input shaft, which is substantially coaxially connected to the crankshaft, and a gear provided on the input shaft;
 - a propeller shaft having a height different from the input shaft, the power transmission device transmitting rotational force of the input shaft to the propeller shaft;
 - an electric power generating equipment interposed between the internal combustion engine and the power transmission device; and
 - an auxiliary electric motor for driving the propeller shaft, the electric motor being driven by electric power generated from the generating equipment, and the electric motor having an output shaft in parallel to the input shaft, wherein the power transmission device is provided with a common gear meshing with both of the gear on the input shaft and a gear on the output shaft of the electric motor so as to transmit rotation of the common gear to the propeller shaft.

19. The power generating and propelling system of a vessel as set forth in claim 18, wherein the propelling shaft is lower than the input shaft, and wherein the electric motor

is attached onto the power transmission device above the propeller shaft so as to project substantially horizontally from the power transmission device.

20. The power generating and propelling system of a vessel as set forth in claim 18, wherein cooling water for cooling the internal combustion engine is passed near the electric motor.

21. The power generating and propelling system of a vessel as set forth in claim 20, wherein the cooling water is taken in from the outside of a propelling machine of the vessel.

22. The power generating and propelling system of a vessel as set forth in claim 20, wherein the cooling water is circulated in a closed circuit provided within a propelling machine of the vessel.

23. The power generating and propelling system of a vessel as set forth in claim 11, wherein the output shaft of the electric motor transfers power to the power transmission device through a torque limiter.

24. The power generating and propelling system of a vessel as set forth in claim 11,

wherein the rotary shaft of the electric motor transfers power to the power transmission device through an elastic joint.

25. The power generating and propelling system of a vessel as set forth in claim 11, wherein the rotary shaft of the electric motor transfers power to the power transmission device through a clutch.